Abstract

An evanescent optically coupled electronic device including: a backplane wave guide or mother board including a set of parallel carriers that define a first plurality of parallel channels and include a first array of optical fibers having exposed cores in the first plurality of parallel channels; at least one electronic card or daughter board including a high speed optical waveguide bus; a flexible fiber ribbon or film including waveguides made up of individual optical fibers of locally increased refractive index joined by a web of suitable material forming the high speed optical waveguide bus and optically connecting the backplane waveguide and the at least one electronic card with no 90° angle turns; and a mechanism for retaining the first array of optical fibers having exposed cores in abutting and facing evanescent optical contact with the individual optical fibers in the flexible fiber or ribbon.